Package 'BrazilDataAPI'

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Type Package

Title Access Brazilian Economic, Demographic, Environmental, and Geopolitical Data via RESTful APIs and Curated Datasets

Version 0.1.0

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Description Provides functions to access data from the 'BrasilAPI' and the 'REST Countries API', related to Brazil's postal codes, banks, holidays, company registrations, and international country indicators. Additionally, the package includes curated datasets related to Brazil, covering topics such as demographic data (males and females by state and year), river levels, environmental emission factors, film festivals, and yellow fever outbreak records. The package supports research and analysis focused on Brazil by integrating open APIs with high-quality datasets from multiple domains. For more details on the 'BrasilAPI', see <https://brasilapi.com.br/>, and for 'REST Countries', see <https://restcountries.com/>.

License GPL-3

URL https://github.com/lightbluetitan/brazildataapi, https://lightbluetitan.github.io/brazildataapi/

BugReports https://github.com/lightbluetitan/brazildataapi/issues

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LazyData true

Depends R (>= 4.1.0)

Imports utils, httr, jsonlite, dplyr

Suggests ggplot2, testthat (>= 3.0.0), knitr, rmarkdown

RoxygenNote 7.3.2

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Contents

`Brasil_females_df` *Brazilian Female Demographics & Mortality (1991-2000)*

Description

This dataset, Brasil_females_df, is a data frame containing population counts and mortality information for females in Brazil, disaggregated by federal states and abridged age groups, for the years 1991 and 2000. The dataset includes 486 observations and 8 variables. Population counts are reported for both years, and deaths are given as average counts over the intercensal period. Age groups follow the pattern 0, 1, 5, ..., 75, with an open age group at 80+. A total of 53 Brazilian states are represented.

Usage

```
data(Brasil_females_df)
```

Format

A data frame with 486 observations and 8 variables:

cod Integer code identifying each federal state

pop1 Population count in 1991 (integer)

pop2 Population count in 2000 (integer)

deaths Average number of deaths during the intercensal period (numeric)

year1 First census year (1991; integer)

year2 Second census year (2000; integer)

age Abridged age group (integer values like 0, 1, 5, ..., 75; open age group at 80)

sex Sex identifier; all values are "f" (character)

Details

The dataset name has been kept as 'Brasil_females_df' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the BrazilDataAPI package and assists users in identifying its specific characteristics. The suffix 'df' indicates that the dataset is a data frame. The original content has not been modified in any way.

Source

Data taken from the DDM package version 1.0-0

Brasil_males_df *Brazilian Male Demographics & Mortality (1980-1991)*

Description

This dataset, Brasil_males_df, is a data frame containing population counts and mortality information for males in Brazil, disaggregated by federal states and abridged age groups, for the years 1980 and 1991. The dataset includes 486 observations and 8 variables. Population counts are reported for both years, and deaths are given as average counts over the intercensal period. Age groups follow the pattern 0, 1, 5, ..., 75, with an open age group at 80+. A total of 53 Brazilian states are represented.

Usage

```
data(Brasil_males_df)
```

Format

A data frame with 486 observations and 8 variables:

cod Integer code identifying each federal state

pop1 Population count in 1980 (integer)

pop2 Population count in 1991 (integer)

deaths Average number of deaths during the intercensal period (numeric)

year1 First census year (1980; integer)

year2 Second census year (1991; integer)

age Abridged age group (integer values like 0, 1, 5, ..., 75; open age group at 80)

sex Sex identifier; all values are "m" (character)

Details

The dataset name has been kept as 'Brasil_males_df' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the BrazilDataAPI package and assists users in identifying its specific characteristics. The suffix 'df' indicates that the dataset is a data frame. The original content has not been modified in any way.

Source

Data taken from the DDM package version 1.0-0

`BrazilDataAPI` *BrazilDataAPI: Access Brazilian Economic, Demographic, Environmental, and Geopolitical Data via RESTful APIs and Curated Datasets*

Description

This package provides functions to access data from the 'BrasilAPI' and the 'REST Countries API',related to Brazil's postal codes, banks, holidays, company registrations, and international country indicators.

Details

BrazilDataAPI: Access Brazilian Economic, Demographic, Environmental, and Geopolitical Data via RESTful APIs and Curated Datasets

Access Brazilian Economic, Demographic, Environmental, and Geopolitical Data via RESTful APIs and Curated Datasets.

Author(s)

Maintainer: Renzo Caceres Rossi <arenzocaceresrossi@gmail.com>

See Also

Useful links:

- https://github.com/lightbluetitan/brazildataapi

`Brazil_films_df` *Films Shown at Brazilian Film Festivals (2007–2011)*

Description

This dataset, Brazil_films_df, is a data frame containing information on films shown at five different film festivals in Brazil from 2007 to 2011. The dataset includes 25 observations and 6 variables, summarizing the number of films, directors, male and female directors, and regional categories for each year.

Usage

```
data(Brazil_films_df)
```

Format

A data frame with 25 observations and 6 variables:

year Year of the film festival (integer)

regE Festival region (factor with 5 levels)

F Number of films shown (integer)

D Number of directors (integer)

MD Number of male directors (integer)

WD Number of female directors (integer)

Details

The dataset name has been kept as 'Brazil_films_df' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the BrazilDataAPI package and assists users in identifying its specific characteristics. The suffix 'df' indicates that the dataset is a data frame. The original content has not been modified in any way.

Source

Data taken from the bpca package version 1.3-6

`get_brazil_banks` *Get List of Banks in Brazil*

Description

This function retrieves the list of all banks in Brazil from the BrasilAPI endpoint: 'https://brasilapi.com.br/api/banks/v1'. The response includes key details such as bank code, name, and ISPB (identificador do sistema de pagamentos).

Usage

```
get_brazil_banks()
```

Value

A tibble (data frame) with the following columns:

- `code`: Bank code (integer).
- `name`: Short name of the bank.
- `fullName`: Full registered name of the bank.
- `ispb`: ISPB code (Identificador do Sistema de Pagamentos Brasileiros).

Note

Requires internet connection. The function pulls data in real time from BrasilAPI.

See Also

GET, fromJSON, as_tibble

Examples

```
## Not run:
banks <- get_brazil_banks()
head(banks)

## End(Not run)
```

`get_brazil_cep` *Get Address Information by Brazilian CEP (Postal Code)*

Description

This function retrieves detailed address information for a given Brazilian postal code (CEP) using the BrasilAPI endpoint.

Usage

```
get_brazil_cep(cep)
```

Arguments

`cep`	A valid Brazilian postal code (CEP) with 8 digits (e.g., "89010025").

Details

Example URL format: `https://brasilapi.com.br/api/cep/v1/89010025`

Replace `89010025` with any valid Brazilian postal code (CEP).

The function sends a GET request to the BrasilAPI CEP endpoint. If the request is successful and the response contains the expected fields, it returns a structured tibble. Otherwise, a message is displayed and `NULL` is returned.

Value

A data frame (tibble) with the following columns:

- `cep`: The CEP (postal code).
- `state`: State abbreviation (e.g., SP, RJ).
- `city`: City or municipality.
- `neighborhood`: Neighborhood.
- `street`: Street name.
- `service`: Name of the API service used.

Note

Requires an internet connection. Make sure the CEP is correctly formatted (only digits, 8 characters).

See Also

GET, fromJSON, as_tibble

Examples

```
## Not run:
# Look up information for a specific CEP
get_brazil_cep("89010025")

## End(Not run)
```

---

get_brazil_cnpj *Get Company Information by CNPJ (Brazil)*

Description

This function retrieves public company registration data in Brazil by querying the BrasilAPI endpoint.

Usage

```
get_brazil_cnpj(cnpj)
```

Arguments

cnpj	A valid CNPJ number as a string (only digits, no punctuation).

Details

Example URL format: https://brasilapi.com.br/api/cnpj/v1/19131243000197

Replace 19131243000197 with any valid Brazilian CNPJ number.

It returns a tibble with essential information such as the company's legal name, trade name, address, primary activity, and registration status.

The function makes an HTTP GET request to the BrasilAPI CNPJ endpoint and processes the JSON response into a structured tibble. It only returns fields that are essential and informative for the user.

Value

A tibble with selected essential fields:

- `cnpj`: CNPJ identifier.
- `razao_social`: Legal name.
- `nome_fantasia`: Trade name.
- `capital_social`: Registered capital (numeric).
- `data_inicio_atividade`: Start date of activities.
- `cnae_fiscal_descricao`: Main economic activity.
- `natureza_juridica`: Legal nature.
- `descricao_situacao_cadastral`: Registration status.
- `municipio`: City.
- `uf`: State.
- `cep`: Postal code.
- `logradouro`: Address (street).
- `numero`: Address number.
- `bairro`: Neighborhood.

Note

Requires internet connection. The function returns `NULL` if the CNPJ is invalid or not found.

See Also

`GET`, `fromJSON`, `as_tibble`

Examples

```
## Not run:
get_brazil_cnpj("19131243000197")

## End(Not run)
```

`get_brazil_municipalities`

Get Municipalities of a Brazilian State from IBGE

Description

This function retrieves a list of municipalities from the Brazilian IBGE API using the state abbreviation (UF). It includes the name of each municipality and its official IBGE code.

Usage

```
get_brazil_municipalities(uf)
```

Arguments

uf	A two-letter string representing the Brazilian state abbreviation (e.g., "SP", "RJ", "BA").

Details

The function sends a GET request to the BrasilAPI IBGE endpoint. If the UF (state abbreviation) is invalid or not recognized, the function returns NULL with an appropriate message.

Value

A data frame (tibble) with the following columns:

- nome: Name of the municipality.
- codigo_ibge: Official IBGE code for the municipality (as character).

Note

Requires internet access. Official IBGE codes are widely used for geostatistical analysis and identification of Brazilian municipalities.

See Also

GET, fromJSON, as_tibble

Examples

```
## Not run:
municipalities_sp <- get_brazil_municipalities("SP")
head(municipalities_sp)

## End(Not run)
```

---

get_brazil_rates *Get Official Interest Rates and Indexes from Brazil*

Description

This function retrieves official interest rates and indexes from the BrazilAPI endpoint: ‘https://brasilapi.com.br/api/taxas/v1‘.

Usage

```
get_brazil_rates()
```

Value

A tibble with the following columns:

- `nome`: Name or acronym of the rate/index.
- `valor`: Current value of the rate/index.

See Also

`GET`, `fromJSON`, `as_tibble`

Examples

```
## Not run:
taxas <- get_brazil_rates()
print(taxas)

## End(Not run)
```

---

get_brazil_rate_name *Get Specific Brazilian Economic Rate by Name*

Description

This function retrieves the value of a specific Brazilian economic rate (e.g., "CDI", "Selic", "IPCA") from the BrasilAPI endpoint.

Usage

```
get_brazil_rate_name(rate_name)
```

Arguments

`rate_name`	A character string indicating the rate to retrieve. Valid examples include `"CDI"`, `"Selic"`, or `"IPCA"`. Case-insensitive.

Value

A tibble with two columns: `nome` (name of rate) and `valor` (numeric value).

See Also

`get_brazil_rates` to retrieve all rates at once.

Examples

```
## Not run:
get_brazil_rate_name("CDI")
get_brazil_rate_name("Selic")
get_brazil_rate_name("IPCA")

## End(Not run)
```

`get_brazil_vehicle_brands` *Get Vehicle Brands from BrasilAPI (FIPE Data)*

Description

This function retrieves a list of vehicle brands in Brazil using the BrasilAPI endpoint, which provides data sourced from FIPE (Fundação Instituto de Pesquisas Econômicas). The user must specify the type of vehicle: ‘"carros"‘, ‘"motos"‘, or ‘"caminhoes"‘.

Usage

```
get_brazil_vehicle_brands(tipo_veiculo)
```

Arguments

`tipo_veiculo`	A string indicating the type of vehicle. Must be one of ‘"carros"‘, ‘"motos"‘, or ‘"caminhoes"‘.

Details

This function sends a GET request to the BrasilAPI endpoint and parses the list of vehicle brands. If the API returns an error (e.g., invalid vehicle type), the function will return `NULL`.

Value

A tibble (data frame) with the following columns:

- `nome`: Brand name.
- `valor`: FIPE code of the brand.

Note

Requires internet connection. Only supports Brazilian vehicle types defined by BrasilAPI.

See Also

`GET`, `fromJSON`, `as_tibble`

Examples

```
## Not run:
# Retrieve list of car brands
cars <- get_brazil_vehicle_brands("carros")
head(cars)

## End(Not run)
```

`get_country_info` *Get Key Country Information from the REST Countries API*

Description

Retrieves selected, essential information about Brazil or any other country by its full name. The data is retrieved from the REST Countries API. See the API documentation at https://restcountries.com/. Example API usage: https://restcountries.com/v3.1/name/brazil?fullText=true.

Usage

```
get_country_info(name)
```

Arguments

`name`	Full country name (common or official). For example: "Brazil", "Peru", "France".

Details

This function returns readable details such as the country's common and official name, capital, region, subregion, population, area, and official languages.

The function sends a GET request to the REST Countries API. If the request is successful (HTTP 200), it parses the JSON and extracts the key fields. If the country is not found or there's an error, the function returns `NULL` with a user-friendly message.

Value

A data frame with 8 columns:

- `name_common`: Common name of the country.
- `name_official`: Official name of the country.
- `capital`: Capital city.
- `region`: Geographic region.
- `subregion`: Subregion.
- `population`: Total population.
- `area`: Total area in square kilometers.
- `languages`: Official languages, separated by commas.

See Also

GET, fromJSON, tibble

Examples

```
## Not run:
get_country_info("Brazil")
get_country_info("Japan")
get_country_info("France")

## End(Not run)
```

---

manaus_ts *Monthly Average Heights of the Rio Negro at Manaus (1903–1992)*

Description

This dataset, manaus_ts, is a univariate time series of monthly average river heights of the Rio Negro at Manaus. The series contains 1080 observations spanning 90 years, from January 1903 to December 1992. Each value represents the monthly average of the daily stages (heights) of the Rio Negro. Manaus is located 18 km upstream from the confluence of the Rio Negro with the Amazon River, and due to the minimal slope and flatland affluents, the measurements can be considered a good approximation of the water level at the confluence.

Usage

```
data(manaus_ts)
```

Format

A univariate time series of class `ts` with 1080 monthly observations from 1903 to 1992:

values Monthly average river heights (numeric)

Details

The dataset name has been kept as 'manaus_ts' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the BrazilDataAPI package and assists users in identifying its specific characteristics. The suffix 'ts' indicates that the dataset is a time series object. The original content has not been modified in any way.

Source

Data taken from the boot package version 1.3-31

`sp_emission_factors_df` *Emission Factors from the Environmental Agency of São Paulo (CETESB)*

Description

This dataset, sp_emission_factors_df, is a data frame containing emission factors from the Environmental Agency of São Paulo (CETESB), including equivalencies with European (EURO) vehicle emission standards. The dataset includes 288 observations and 10 variables, covering pollutants, vehicle age and type, and classification systems such as Proconve and EURO for both light-duty and heavy-duty vehicles.

Usage

```
data(sp_emission_factors_df)
```

Format

A data frame with 288 observations and 10 variables:

Age Vehicle age (integer)

Year Reference year (integer)

Pollutant Pollutant type (character)

Proconve_LDV Proconve classification for light-duty vehicles (factor)

t_Euro_LDV Temporal equivalence to EURO for light-duty vehicles (factor)

Euro_LDV EURO standard classification for light-duty vehicles (factor)

Proconve_HDV Proconve classification for heavy-duty vehicles (factor)

Euro_HDV EURO standard classification for heavy-duty vehicles (factor)

PC_G Emission factor (numeric)

LT Lifetime or load factor (numeric)

Details

The dataset name has been kept as 'sp_emission_factors_df' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the BrazilDataAPI package and assists users in identifying its specific characteristics. The suffix 'df' indicates that the dataset is a data frame. The original content has not been modified in any way.

Source

Data taken from the vein package version 1.1.3

view_datasets_BrazilDataAPI *View Available Datasets in BrazilDataAPI*

Description

This function lists all datasets available in the 'BrazilDataAPI' package. If the 'BrazilDataAPI' package is not loaded, it stops and shows an error message. If no datasets are available, it returns a message and an empty vector.

Usage

```
view_datasets_BrazilDataAPI()
```

Value

A character vector with the names of the available datasets. If no datasets are found, it returns an empty character vector.

Examples

```
if (requireNamespace("BrazilDataAPI", quietly = TRUE)) {
  library(BrazilDataAPI)
  view_datasets_BrazilDataAPI()
}
```

Yellow_Fever_list *Yellow Fever Outbreak in Brazil (Dec 2016 – May 2017)*

Description

This dataset, Yellow_Fever_list, is a list object containing information on the flow of Yellow Fever cases between five Brazilian states during the outbreak period from December 2016 to May 2017. The data include epidemiological statistics such as the number of cases, population, dates of first and last recorded cases, as well as travel-related matrices indicating disease importation and exportation.

Usage

```
data(Yellow_Fever_list)
```

Format

A list with 4 elements:

states A data frame with 5 observations on 5 variables, including location code, population, number of cases, and dates of first and last reported cases

T_D A 5x10 numeric matrix of travel destinations (disease importation probabilities)

T_O A 5x10 numeric matrix of travel origins (disease exportation probabilities)

length_of_stay A named numeric vector of average length of stay per destination

Details

The dataset name has been kept as 'Yellow_Fever_list' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the BrazilDataAPI package and assists users in identifying its specific characteristics. The suffix 'list' indicates that the dataset is a list object. The original content has not been modified in any way.

Source

Data taken from the epiflows package version 0.2.1

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